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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/788,273	02/16/2001	Jiping Li	M-9367 US	6335
34036	7590	10/15/2003	EXAMINER	
SILICON VALLEY PATENT GROUP LLP 2350 MISSION COLLEGE BOULEVARD SUITE 360 SANTA CLARA, CA 95054			ESTRADA, MICHELLE	
			ART UNIT	PAPER NUMBER
			2823	

DATE MAILED: 10/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	09/788,273	LI ET AL.	
	Examiner	Art Unit	
	Michelle Estrada	2823	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 20 June 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-17 and 29-52 is/are pending in the application.
- 4a) Of the above claim(s) 11-15 and 29-37 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17 and 38-47 is/are allowed.
- 6) ☒ Claim(s) 1-10, 16 and 48-52 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 20 June 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                   | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                          | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>15</u> . | 6) <input type="checkbox"/> Other: _____                                    |

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**DETAILED ACTION**

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***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-9, 16 and 48-51 are rejected under 35 U.S.C. 102(e) as being anticipated by Ushio et al. (6,489,624).

Ushio et al. disclose illuminating the wafer (60) with a beam of electromagnetic radiation having a majority of energy polarized in a direction other than parallel to a longitudinal direction of the feature; and measuring intensity of a portion of the beam reflected by the wafer (Col. 22, lines 37-42); the features includes a sidewall (37) of a groove (Col. 14, lines 50-52); the act of measuring is performed repeatedly at a plurality of locations transverse to the longitudinal direction of the groove (Col. 22, lines 42-47); the feature includes a trace of a reflective material (64); the wafer includes a layer (64) located between a source of the beam and the feature; and the layer is at least partially transmissive, so that the portion passes through the layer; the beam has a majority of energy polarized in a direction at least substantially perpendicular to the longitudinal direction; further comprising a plurality of features and performing the act of measuring for each feature of the plurality; and comparing measurement of multiple features (Col.

14, lines 55-67 and Fig. 6); forming a feature of conductive material (63) in a wafer (60) by using at least one process parameter; and changing the process parameter depending on measurements obtained from the act of repeatedly measuring (Col. 22, lines 42-64); wherein each feature is a sidewall (See fig. 6); the beam has a wavelength greater than thickness of the sidewall (Col. 21, lines 2-5); the beam has a wavelength greater than dimension of the feature; and the beam forms on the wafer a spot of a diameter greater than the dimension (Col. 22, lines 29-35); the beam has a predetermined wavelength and the method further comprises filtering light of a wavelength other than the predetermined wavelength (Col. 6, line 66-Col. 7, line 4); forming an angle  $\theta$  with a longitudinal direction of the sidewall with an angle  $\theta > 45^\circ$ .

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ushio et al. as applied to claims 1-9, 16 and 48-51 above, and further in view of Mc Coy et al. (5,741,614).

Ushio et al. do not disclose that the act of comparing includes comparing measurements of two sidewalls located opposite to one another in a groove.

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Mc Coy et al. disclose comparing measurements of two sidewalls located opposite to one another in a groove (Col. 7, lines 19-37, Col 8, lines 6-7 and Col. 8, lines 20-24).

It would have been within the scope of one of ordinary skill in the art to combine the teachings of Ushio et al. and Mc Coy to perform the measurements of the sidewalls.

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Claim 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ushio et al. as applied to claims 1-9, 16 and 48-51 above, and further in view of Sui et al. (6,559,942).

Ushio et al. do not disclose that said light reflected by the wafer is part of another beam.

Sui et al. disclose that said light reflected by the wafer is part of another beam; a first and a second polarizer; changing one or more process parameters detecting substrate reflected radiation 31 having one or more polarization angles related to the orientation (Col. 5, lines 30-55).

***Allowable Subject Matter***

Claims 17 and 38-47 are allowed.

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***Response to Arguments***

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Applicant argues that Ushio et al. does not disclose any orientation of a direction of polarization relative to the feature. However, Fig. 6 clearly discloses a direction other than parallel to the longitudinal direction of the feature.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michelle Estrada whose telephone number is (703) 308-0729. The examiner can normally be reached on Monday through Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on 703-306-2794. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-

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0956.



George Fourson  
Primary Examiner  
Art Unit 2823



MEstrada  
October 1, 2003